



April 4, 2000

TO POTENTIAL OFFERORS AND OTHER INTERESTED PARTIES

INFORMATION PACKAGE

1. INTRODUCTION/INSTRUCTIONS

The Statement of Work (SOW) for Request for Proposal (RFP) No. DE-RP26-00NT40708 entitled "Large Scale Equipment Tests for Pipeline Unplugging Technologies" as well as related attachments are being released in **draft form** to provide an opportunity for potential offerors to review and become familiar with the requirements. Prospective offerors are invited to comment on all aspects of the information provided herein; however, special emphasis is requested in the following areas:

- 1) Overall clarity of the Statement of Work and related attachments.
- 2) Identification of information not presented which will make the SOW and related attachments more understandable and thorough.
- 3) Problems or concerns with performing a negotiated fixed-price contract.
- 4) Problems or concerns with providing a test plan as part of the proposal.
- 5) Problems or concerns related to coordinating test plan and any test bed modifications with FIU.
- 6) Would a site visit to the FIU test beds be beneficial for your company?

The DOE will consider all timely comments submitted on the information contained herein, but makes no guarantee that any comment or group of comments will result in identifiable changes to the solicitation. **Comments should be submitted to Vicky Shears via e-mail at vshear@netl.doe.gov, by fax at (304)285-4683 or by mail, no later than April 19, 2000.**

The DOE is under no obligation to respond to individual comments or questions, nor is it responsible for any costs associated with preparation of responses to this request or costs associated with future proposal preparation.

Offerors are cautioned that the information provided herein is not all inclusive and is subject to change at the discretion of the DOE.

2. RELEASE OF ENTIRE SOLICITATION

The solicitation should be available the first of May 2000. At least a 30-day response time is anticipated. The solicitation will be posted on the NETL Homepage and will be available by paper upon request. Offerors are encouraged to utilize the electronic format. Those

prospective offerors who obtain a copy of the solicitation through the internet should check the location frequently for any solicitation amendments.

3. **CONTRACT TYPE:** Negotiated Firm Fixed-Price

4. **AWARDS:** Anticipate four to five awards.

5. **SMALL BUSINESS SIZE STANDARD AND SET-ASIDE INFORMATION**

The Standard Industrial Code for this solicitation is 8731. A small business is defined as having 500 or less employees. The procurement is a partial small business set-aside.

6. **BACKGROUND**

See Attachment B.

7. **DRAFT STATEMENT OF WORK**

See Attachment A.

8. **OTHER ATTACHMENTS FOR MODEL CONTRACT** (Is not all inclusive)

Attachment D - Health and Safety Certification

Attachment E - Job Safety Analysis Form

Attachment F - Contractor/Manufacturer Data for Comparative Database

Attachment G - Field Test Evaluation Parameters

9. **APPENDICES TO THE SOLICITATION** (Is not all inclusive)

Appendix A - Test Plan Preparation Guidelines

Appendix B - Test Bed Descriptions

10. **SECTION L - INSTRUCTIONS, CONDITIONS, AND NOTICES TO OFFERORS OR QUOTERS** (Is not all inclusive)

Article L.22 - Preparation Instructions: Volume II - Technical Proposal

Article L.23 - Preparation Instructions: Volume III - Cost Proposal

11. **SECTION M - EVALUATION FACTORS FOR AWARD**

Entire section is included.

Note: The actual Statement of Work for each contract will reflect the testing to be done by that contractor.

STATEMENT OF WORK

“Large Scale Equipment Tests for Pipeline Unplugging Technologies” DE-RP26-00NT40708

A. OBJECTIVES:

The objectives of this project are to field test and evaluate technologies under standardized, non-nuclear conditions to detect blockages in waste transfer pipelines and then reach and unplug the blockages. The technologies will be considered for deployment in high-level radioactive waste transfer pipelines at the DOE Savannah River and Hanford sites. Contractors shall demonstrate the performance of its equipment or technologies to achieve the following:

- Detect blockages in single and double-wall waste transfer pipelines through the ground.
- Provide a mechanism to deliver equipment to a blocked location within the pipeline or initiate a process for unplugging (potentially at great distance from the access point).
- Dislodge the blockage within the pipeline.

B. SCOPE OF WORK:

A field test shall be conducted on at least one of three Large-Scale Test Beds located at the Florida International University (FIU), Hemispheric Center for Environmental Technology (HCET) in Miami, Florida. The contractor shall demonstrate its technology in accordance with its test plan developed in coordination with FIU-HCET. The results of the technology demonstration will become part of reports submitted to DOE by FIU-HCET. These reports will assist DOE's Tank Focus Area technical teams or site managers in the selection of the most efficient, cost-effective, and safest technologies to unplug high-level radioactive waste transfer pipelines based on their site-specific needs.

C. TASKS TO BE PERFORMED

TASK 1 -- MOBILIZATION

After contract award and two weeks prior to technology demonstration, the following shall be submitted by the contractor to FIU-HCET (with and information copy to the DOE/COR) so that a site work permit can be prepared and posted.

Health and Safety Certification (Attachment D) (only if respirators will be used)
Job Safety Analysis Form (Attachment E)
Contractor/Manufacturer Data for Comparative Database (Attachment F)
Technology Manuals (if any available)
Confirmation of Demonstration Schedule

The contractor shall mobilize the pipeline unplugging technology in preparation for the field test at FIU-HCET. The technology shall be deployed in accordance with the approved Test Plan. The contractor shall comply with all Federal, state and local regulations with regard to setting up and conducting the field test of its pipeline unplugging technology.

TASK 2 -- OPERATIONS

The contractor shall perform a field test of its pipeline unplugging technology on at least one of the three Large-Scale Test Beds at FIU-HCET in accordance with the approved test plan. The Contractor shall be responsible for demonstrating and optimizing the operation of its technology.

Evaluation of the field test shall be conducted by FIU-HCET in accordance with Attachment G - Field Test Evaluation.

TASK 3 -- DEMOBILIZATION

The contractor shall demobilize the pipeline unplugging technology at the conclusion of the operations phase.

D. DELIVERABLES

The contractor will receive a draft Data Entry Form for the “Multimedia Information System” database which will contain all the data collected by the FIU-HCET evaluators on the contractor’s technology as well as photos taken during the demonstration. The contractor shall provide comments on the draft package to the DOE-COR within 30 calendar days after receipt.

BACKGROUND

“Large Scale Equipment Tests for Pipeline Unplugging Technologies” DE-RP26-00NT40708

The U.S. Department of Energy (DOE) needs safe and efficient technologies for radioactive tank waste retrieval, immobilization, and disposal activities. As tank clean-out and decommissioning activities begin at DOE sites, the possibility increases for high-level radioactive waste transfer lines becoming plugged and unable to transport waste. Whereas some sites, such as Savannah River, Hanford, and Oak Ridge, experienced blocked lines in the past, plugging may recur at these sites at the onset of waste transfer. Plugged pipelines represent a considerable hazard as well as a loss of time and money.

In order to meet DOE's needs for waste transfer technologies, the Florida International University, Hemispheric Center for Environmental Technology (FIU-HCET) was contracted by DOE to conduct laboratory-scale and large-scale research studies regarding pipeline plugging mechanisms and possible pipeline unplugging technologies in waste transfer pipelines. The objectives of lab-scale research were to:

- investigate the mechanism of slurry behavior in a flow loop.
- obtain slurry transport data to avoid plugging of pipeline.
- create the blockage conditions that will be used on the large-scale Test Beds.
- design and then construct three Large-Scale Test Beds

Three large-scale Test Beds were recently constructed at FIU-HCET and will be used to conduct field tests of various selected technologies for detecting, reaching and unplugging pipeline blockages during the year 2000. FIU-HCET is under DOE contract to record all performance data yielded from each field test of a pipeline unplugging technology performed by the technology contractor's personnel, evaluate the field test data and prepare a technology report on each field test.

As a first step for the technology field tests, the National Energy Technology Laboratory (NETL) will solicit technologies for detecting, reaching and unplugging pipeline blockages. Proposers to this solicitation will identify which of the three large-scale Test Beds at FIU-HCET should be used and what adjustments or modifications should be made (if any) to best demonstrate its pipeline unplugging technology performance. The technology contractor shall develop a test plan in coordination with FIU-HCET to best exhibit its technology. The offeror shall include this information in its proposal as per contract section L.15, Proposal Preparation Instructions. After contract award, the selected technologies shall then be field tested on one or more of the three Test Beds located at FIU-HCET, Miami, Florida.

After each field test of a pipeline unplugging technology, FIU-HCET will publish a Technology Demonstration Report containing demonstration statistics and evaluation of the technology along with recommendations for deployment at DOE sites. The technology evaluation results will be published by FIU-HCET in both a Monthly and a Year-End Report to DOE. In addition, a summary of successful pipeline unplugging technology evaluations will be published on the FIU-HCET Internet web site within 60 days of a technology demonstration completion.

The FIU-HCET address is:

Hemispheric Center for Environmental Technology
Florida International University
10555 West Flagler St., Suite #2100
Miami, FL. 33174

Directions from Miami International Airport to FIU-HCET Center for Engineering and Applied Science:

- From the Airport, take the Lejeune Rd. South-Coral Gables exit.
- After approx. ½ mile, take the exit to the 836 West Expressway and stay in the right lane.
- Travel approx. five miles. Exit on South NW 107th Avenue. (Do not be confused with the North NW 107th Avenue exit.)
- The Center for Engineering and Applied Science building is on the left, approx. two miles South from the exit. (Northeast corner of W. Flagler St. and NW 107th Avenue)
- Three Test Beds are located at Northeast corner of the FIU-HCET site.

Health and Safety Certification

“Large Scale Equipment Tests for Pipeline Unplugging Technologies” DE-RP26-00NT40708

As the designated representative for _____,
(Company Name)

I hereby certify that all technology operators involved in conducting the
Pipeline Unplugging Technology demonstration at Florida International University’s
Hemispheric Center for Environmental Technology on _____ satisfy
(Demonstration Dates)

the following health and safety criteria:

Operators are in satisfactory health (as determined by a physician) to perform activities that
are related to the operation of the technology in potentially elevated temperature and
humidity conditions;

Operators are respirator fit-test certified according to the Code of Federal Regulations (29
CFR 1910.1001) if required to use a respirator during the field test; and

Operators will arrive prepared to wear at a minimum level D personal protective equipment
(PPE) at all times while on the FIU-HCET technology assessment site.
Level D PPE includes a shirt, work gloves, long pants, and safety glasses. Additional
PPE may be required during the demonstration, as determined by the contractor,
depending on the nature of the technology. The contractor has consulted a health and
safety professional regarding PPE requirements for the technology being
demonstrated.

(Representative’s Signature)

(Representative’s Name – Printed or Typed)

(Title)

(Date)

JOB SAFETY ANALYSIS FORM

**“Large Scale Equipment Tests for Pipeline Unplugging
Technologies”**

DE-RP26-00NT40708

Technology Name: _____

Demonstration Date: _____

Contractor: _____

Analysis by: _____

Title: _____

REQUIRED AND/OR RECOMMENDED PERSONAL EQUIPMENT:

**SEQUENCE OF
BASIC
JOB STEPS**

**POTENTIAL
ACCIDENT
HAZARDS**

**RECOMMENDED
SAFE
JOB PROCEDURE**

Contractor/Manufacturer Data for Comparative Database
“Large Scale Equipment Tests for Pipeline Unplugging Technologies”
DE-RP26-00NT40708

Table 1 GENERAL INFORMATION ABOUT TECHNOLOGY

<u>DATA</u>	<u>DESCRIPTION</u>
Technology Name	The generic name of the technology. Examples include: Snake Blaster Pig Finder Water Detector
Technology Model Number	Unique identifier for the technology model. Typically supplied by the the manufacturer.
Technology Model Description	Technical description of the technology including basic principle(s) and operational parameters and conditions. Discuss all pieces of equipment required by the original manufacturer (e.g., pipe, pig) for this technology model. Include dimensions and weight of technology model. Also, include discussion on how waste is routinely contained for this model if there is any.
Maturity of Technology	The maturity of the technology at the time of the demonstration. Choose from: Commercially available or Prototype
Utility Requirements for Technology Model	Energy and material requirements. Includes compressed air and water requirements, etc.
Technology Model Capital Costs	The vendor’s current list price for the entire technology model. Include cost of all pieces (e.g., pig, pipe) that are part of the technology model.

Table 1 GENERAL INFORMATION ABOUT TECHNOLOGY (Continued)

<u>DATA</u>	<u>DESCRIPTION</u>
Support Equipment and Cost	List any required support equipment (not utilities) that are included in the demonstration. Include description of each and associated capital costs. Examples include: Detector supporter, \$500 high pressure generator, \$200
Useful Life Expectancy	The number of years that the technology model can possibly be used for its specified purpose.
Applicable Pipe Diameters	Select all possible pipe diameters to which the technology model can be applied. Choose from the following: (May include more than one option.) 1-inch, 2-inch, 3-inch, and/or 4-inch
Applicable Geometries	Select all possible geometries to which the technology model can be applied. Choose from the following: (May include more than one option.) Single and/or double pipes
Consumables and Cost	List expendable items and associated costs for each item, used with the technology that are typically discarded at the end of a job. Examples include: Cleaning cloth, \$10 gloves, \$20
Portability Options	Select one or more ways that are ways for removing the technology model from the transportation vehicle once it arrives at the facility where the demonstration is to be performed. Options include: 1 person needed – the technology model is small/light and easily carried by one person 2 people needed – the technology model is not as small/light and requires two people to carry it Forklift needed – the technology model is large/heavy and requires a forklift to remove it from the vehicle Truck/trailer mounted – the major pieces of the technology model are not removed from the truck/trailer but instead are operated from this location

Table 2 CONTRACTOR INFORMATION

<u>DATA</u>	<u>DESCRIPTION</u>
Name and Address	Information to be collected about the company that was chosen as the contractor for this particular demonstration.
Phone Number(s)	Include area code. Include pager number or second phone number (if applicable).
Fax Number(s)	Contractor's fax number including area code.
Web-site	Internet web-site location for vendor (if applicable).
E-Mail	E-mail address for the vendor where information can be requested.
Services Available	What services the vendor provides. Chosen from one of the following: Service provider Sells technology model * Rents technology model * (* When these items are chosen, if the manufacturer will train site personnel, include technology model training time.)
References	List of locations where this technology model has been used previously (especially other DOE or commercial nuclear facilities).
Publications	List of brochures or publications that provides additional information about the technology and/or the company.

Table 3 MANUFACTURER INFORMATION

<u>DATA</u>	<u>DESCRIPTION</u>
Name and Address	Information to be collected about company that manufactured the technology model.
Phone Number(s)	Include area code. Include pager number or second phone number (if applicable).
Fax Number(s)	Manufacturer's fax number including area code.
Web-site	Internet web-site location for manufacturer (if applicable).
E-Mail	E-mail address for the manufacturer where information can be requested.
Services Available	What services the manufacturer provides. Chosen from one of the following: Service provider Sells technology model * Rents technology model * (* When these items are chosen, if the manufacturer will train site personnel, include technology model training time.)
References	List of locations where this technology model has been used previously (especially other DOE or commercial nuclear facilities).
Publications	List of brochures or publications that provides additional information about the technology model and/or the company.
Photographs/video	If photographs or video is received from the manufacturer and sent for inclusion in the database for the project, identify an item and the number of each sent to FIU-HCET.

Table 4 CONTRACTOR SUPPLIED INFORMATION ABOUT TECHNOLOGY

<u>DATA</u>	<u>DESCRIPTION</u>
Required Personnel for Operation	Manpower requirements for operation of this technology. Distinguish between number of equipment operators and number of technicians required.
Technology Model Availability	Average expected delay between order placement and vendor delivery.
Scale-up Requirements	Provide a description of what equipment/personnel would be changed or added by the contractor
Maintenance Requirements	Listing of the maintenance requirements for the technology model. Include time frames to perform maintenance. Examples include: change filter every six months add oil to motor at end of every day
Total Maintenance Cost per ft	Include total cost of regular maintenance per foot of pipe length.

FIELD TEST EVALUATION PARAMETERS
“Large Scale Equipment Tests for Pipeline Unplugging Technologies”
DE-RP26-00NT40708

1.0 GENERAL

The contractor’s Test Plan shall define a technology specific test case that will provide the basis for the demonstration of the contractor’s technology under standardized, non-nuclear conditions at FIU-HCET’s field test site. The contractor shall be responsible for conducting the field test and optimizing the operation of its technology. Performance data yielded from the field test performed by the technology contractor’s representatives will be recorded by FIU-HCET evaluators. Data to be collected by FIU-HCET evaluation personnel include time studies, physical measurement, and visual inspection. An International Union and Operating Engineers (IUOE) representative may be on-site to assess the technology with regard to health and safety factors. Photographs and video taping will also document the technology in operation.

For both the blockage removal and blockage location equipment, the performance assessment shall include how effectively the equipment negotiated the line, removed the blockage, and how readily adaptable the method would be for deployment at a DOE site. General data recorded during all field tests include:

- mobilization and demobilization times
- portability
- maneuverability
- demonstration statistics
- required PPE
- general health and safety information
- total volume of waste measured

2.0 TEST BED #1

2.1 Performance Measures Test Bed #1 - Reaching and Unplugging Technology

The equipment must break up the blockage, disperse it by pumping or flushing out of the pipeline by an operating jumper at the pipe entrance. Test Bed #1 can also be used to see how effectively the technology can reach inside the complex pipe geometry including the SRS Evaporator Jumper. Criteria for the reaching system is described in Section 3.1 below.

Some of the criteria for unplugging technologies include:

- system applicability to line sizes and lengths as well as the nature of the blockages,
- equipment associated with the method may need to operate effectively while fully or partially submerged in aqueous solution,
- minimum number of system entry/withdrawal cycles from the pipeline,
- invasive equipment must be recoverable,
- recovery plan of stranded invasive equipment must not require disassembly, modification, or damage to the line,
- invasive blockage detection equipment for the reaching technology must be recoverable.

2.2 Data to Be Collected for Test Bed #1

- time consumed
- unplugging efficiencies
 - Removed mass/ Total blockage mass
 - Open area after unplugging/ Area of pipeline section
- reaching distance capability
- recovery capability of equipment

3.0 TEST BED #2

3.1 Performance Measures for Test Bed #2 - Reaching and Unplugging Technology

A reaching system can be self-propelled or remotely operated from outside the pipe. It may be a self-contained unattached system or drag one or more umbilical lines that supply various services including the propelling force. It may also transmit a force up the pipe without mechanical intrusion. The inner walls of the pipe may support or guide the movement of the reaching system when the equipment travels through successive bends with close proximity. Successful evaluation include but are not limited to, the following:

- capable of advancing through an empty pipe, a partially liquid-filled or a liquid-filled pipe,
- capable of negotiating 90° bends that may exist along the pipe route,
- capable of transmitting sufficient force to the section being pushed from the pipe entrance,
- capable of safely recovering the equipment after the demonstration,
- unplugging capabilities as listed in Section 2.1 above except that the blockages will be clay-like and fill a section of the pipe completely,
- invasive blockage detection equipment for the reaching technology must be recovered.

3.2 Data to be Collected for Test Bed #2

- distance reached by equipment
- reaching time
- unplugging efficiencies
 - Removed mass/ Total blockage mass
 - Open area after unplugging/ Area of pipeline section
- recovery capability of equipment

4.0 TEST BED #3

4.1 Performance Measures for Test Bed #3 - Underground Detecting Technology

Locating and removing the blockages may be combined in one operation, or may involve independent equipment and procedures. If locating and removing the blockage are performed as independent operations, the operation should not require excavation of the pipeline or entrance of the equipment into the line. Such a method would use equipment positioned above ground to determine the location of a blockage in the core of a buried, jacketed pipe assembly. The equipment must possess the sensing device that detects blockage through the ground. The technology contractor will receive material compositions of the blockage prior to the demonstration to fine-tune the detection system. The material to be detected may be negotiated by the technology contractor as part of the Test Plan.

Some of the criteria for a pipeline blockage detecting technology include:

- capable of detecting a blockage in a jacketed pipe buried up to the depth of 5 feet.
- capable of detecting a blockage made of a single unit of certain rigid or flexible consistent material of arbitrary length and at random locations or by other indicators such as locating water or a gamma source in a buried pipe.

4.2 Data to be Collected for Test Bed #3

- detecting accuracy (number of blockages accurately detected)
- blockage material sensitivity
- blockage location sensitivity

5.0 DATA COLLECTION METHODS

Data will be taken by FIU-HCET evaluators based on the method set forth by the technology manual, if available, to be supplied by the technology contractor. Each technology is unique, however, following examples of observation methods may be used to obtain data: direct measurement, computer analysis, and visual scrutiny.

5.1 Data Quality

When data sheets are used by FIU-HCET evaluators, the data sheets shall include the units of measure and the decimal precision. Typical evaluation parameters to be recorded or calculations to be performed on data sheets include the following:

Percent Accuracy

$$\% A = 100 \times (\bar{X} - \hat{X}) / \hat{X}$$

The difference between the mean of the set of results and the value X, which is accepted as the true or correct value for the quantity measured.

Precision

$$s = \sqrt{\sum_{i=1}^n (X_i - \bar{X})^2 / (n-1)}$$

The standard deviation.

Mobilization Time

Mobilization Time (hours) = time from when the vendor arrives at the demonstration site to when the technology model is ready to operate.

Demobilization Time

Demobilization time (hours) = time from when the technology finished demonstration to when the vendor leaves the demonstration site.

Time Consumed

Time consumed (hours) = time for how long it takes for technology to start operating and then to finish its demonstration.

Unplugging Efficiency

Efficiency_{mass} (%) = Removed mass / Total blockage mass

Efficiency_{area} (%) = Open area after unplugging / Area of blockage cross section

Reaching Speed

Reaching speed (ft /min) = Distance reached / Reaching time

Distance reached (feet) is the distance the technology can reach inside the pipeline from the entry.

Reaching time (minutes) is the average elapsed time it takes the technology to successfully reach the blockage.

5.2 Data Control

Data will be collected by FIU-HCET evaluators and recorded in the data sheets to be used for post-demonstration calculations as identified in Section 9.3 below.

Data will be verified for correctness and completeness and handled for traceability and to prevent data loss.

5.3 Data Evaluation

Data will be checked by FIU-HCET for accuracy, completeness, and correctness. Data evaluations shall be documented, signed, and dated.

5.4 Measuring and Test Equipment

For any contractor equipment that may need calibration , the contractor's technology manual will be referred for calibration limit(s) and calibration frequency.

The IUOE instrument used for monitoring sound levels is a Quest Q-3000 noise dosimeter and a Quest Temp 15 Heat Stress Monitor is used for monitoring heat stress.

**Technology Demonstration Test Plan Preparation Guideline
“Large Scale Equipment Tests for Pipeline Unplugging Technologies”
DE-RP26-00NT40708**

1.0 Introduction

The objective of this guideline is assist the Offeror in preparing a test plan in coordination with FIU-HCET to best demonstrate its technology. This test plan is required as part of the proposal (Contract section L.22, “Proposal Preparation Instructions”). The point of contacts at FIU-HCET that will assist the Offeror in preparing the test plan are:

Ms. Yumiko Sukegawa (primary contact)
Phone: (305)348-6306 Fax: (305)348-1697

Dr. Peter Skudarnov
Phone: (305)348-2377 Fax: (305)348-1697

2.0 Preparation of Test Plan by Offeror

The offeror shall prepare a test plan with the format and contents as defined in Section 6.0 below. A detailed description of the Test Beds are contained in Appendix B. The Test Beds are subject to modification (as agreed to in the Test Plan) based on the specific requirements of the pipeline unplugging technology to be tested.

Table 1, is the generic test case matrix for potential equipment tests on all three of the large-scale Test Beds. It shows the specifications and location(s) of the blockages. Different types of blockages with different length will be placed in each Test Bed. The description of the access point(s), access pipe diameter and access point conditions for the three different Test Beds are also provided in Table 1. The Internet drawings referenced in Table 1 can be found at URL :
<www.hcet.fiu.edu/r&d/tfa/unplugging/>

The test plan will be developed between the Offeror and the FIU-HCET point of contacts identified in Section 1.0 above. After contract award, the demonstration of the contractor’s technology shall be performed in accordance with the test plan submitted as part of the proposal. Changes, if any, made to the test plan during negotiations, will be reflected in the test plan incorporated into the contract. The test plan shall not be altered after contract award.

Attachment G of the model agreement titled, Field Test Evaluation Parameters, contains the performance measures, data to be collected and collection methods for the field test demonstration.

3.0 Test Plan Resource Requirements

(a)FIU-HCET will provide the following test bed resources to the technology contractor for the duration of the demonstration:

- 60 psi, 6 gpm potable water supply 100 yards from the test site
- 110 volt, 15 amp single phase electrical supply 100 yards from the test site
- light-duty all terrain fork lift (6,000 – 8,000 lb. Rated)
- management and disposal of all waste materials generated during the demonstration

(b) Technology contractors are required to supply:

- all equipment including rigging (if required), support equipment, spare parts and tools
- all personal protective equipment (see Section 4.0 below)
- operating procedures for pipeline unplugging equipment
- brief introduction to the technology and equipment, which will be video-taped as part of the demonstration file
- other equipment not provided by FIU-HCET

4.0 Health and Safety Requirements during Test Bed Operations

The Personal Protection Equipment (PPE) requirements for all personnel who enter the site of the three Test Beds located at FIU-HCET during the technology demonstration are at a minimum level D. Level D PPE includes a shirt, work gloves, long pants, and safety glasses. Additional PPE may be required by the contractor depending on the nature of the technology. Contractors shall consult its health and safety officer regarding PPE requirements for its technology.

FIU-HCET evaluators will continuously monitor the technology demonstration based on information given in the contractor's Job Safety Analysis form and the FIU-HCET Work Permit. Any indication of an unsafe condition (actual or perceived) identified by any observer of the demonstration shall be sufficient cause to halt the demonstration until the condition is corrected and/or explained to the satisfaction of the FIU-HCET test engineer.

5.0 Typical Demonstration Procedure Example

Two weeks prior to the demonstration:

The contractor submits the information required in the Statement of Work.

FIU-HCET confirms the final demonstration schedule with the technology contractor.

One week prior to the demonstration:

FIU-HCET generates a Work Permit based on the technology contractor's Job Safety Analysis.

The NETL Contracting Officer's Representative (COR) arranges a conference call with the FIU-HCET Project Manager and the technology contractor's Project Manager to discuss (1) when the equipment will arrive at FIU-HCET, (2) when the technology contractor's crew will arrive at FIU-HCET, and (3) a detailed demonstration schedule.

First day of demonstration

The technology contractor is responsible for the following regarding its equipment: 1) cleaning, 2) calibration and adjustment, 3) maintenance, and any other activities that assure the integrity of the system, equipment, and data.

FIU-HCET evaluators and the technology contractor will review the technology test plan, project specific health and safety plan, and the FIU-HCET Work Permit.

At no time will the technology contractor be allowed to unload or load equipment or start demonstrations without the presence of FIU-HCET evaluators.

Depending on the technology to be tested, demonstration Test Bed(s) and blockage(s) will be arranged according to the technology specific Test Plan. The following steps are examples that may be followed on the first day of the demonstration.

- 1)The contractor's equipment operator(s), the FIU-HCET evaluator, the Project Managers of both FIU-HCET and the contractor, and IUOE personnel review the technology test plan before the start of the demonstration.
- 2)The contractor's equipment operator(s) will set up necessary equipment in place and get ready for the demonstration. For example, if the equipment is going to be operated three feet off the ground and requires a support system, such a system will be set up and secured for the operation by the contractor's equipment operator(s).
- 3)The contractor's equipment operator(s) will perform the testing when the FIU-HCET evaluator is ready to take the necessary information regarding the demonstration. The demonstration shall not be performed without the presence of the FIU-HCET evaluator and the FIU-HCET Project Manager.
- 4)FIU-HCET evaluators will collect data and take measurements.
- 5)Waste generated during the demonstration will be collected by the contractor and recorded by FIU-HCET evaluators. Primary and secondary waste will be placed in properly sized containers provided by FIU-HCET and clearly labeled. FIU-HCET is responsible for waste disposal.
- 5) Photos will be taken by FIU-HCET evaluators. Photos shall, at minimum, include each piece of equipment, removed blockages, and technology operation. All photos taken during technology demonstration shall be recorded in a film log.
- 6) Video recording will be performed by FIU-HCET. The video shall contain (1) a brief description of the technology and equipment given by the contractor; (2) equipment operation; and (3) working environment conditions.

Once the initial test of the technology is complete, test conditions will be changed and the same procedure will be repeated if the technology is being tested on different blockage material and/or Test Bed. Due to the nature of the simulated blockage, no sample analysis is required.

6.0 Test Plan Format and Contents

TITLE:

1. **TECHNOLOGY SPECIFIC TEST CASE** (Identify the required Test Bed(s) and define at least one technology specific test case that will provide the basis for the demonstration of your technology under standardized, non-nuclear conditions)
2. **MODIFICATIONS REQUIRED TO THE TEST BED** (Discuss any modifications to the Test Bed(s), if required, to best demonstrate the pipeline unplugging equipment, as developed in coordination with FIU-HCET.)
3. **DEMONSTRATION PROCEDURE AND SCHEULE** (Provide a tentative schedule for the demonstation of your technology and a proposed agenda for the day or days at the FIU-HCET Test Beds, as developed in coordination with FIU-HCET. Define any rigging or support equipment that you plan to bring to the FIU-HCET site to assist in setting up and/or performing the demonstration your technology.)
4. **CONTRACTOR PERSONNEL THAT WILL BE PRESENT DURING THE FIELD TEST** (Identify your test personnel by number and function. At a minimum the contractor shall provide a full-time project manager and an equipment operator during the technology demonstration.)
5. **REQUIRED PERSONAL PROTECTION EQUIPMENT** (Identify any PPE requirements greater than Level D that your equipment operator may be required to meet in order to safely demonstrate your technology.)
6. **HEALTH AND SAFETY REQUIREMENTS** (Provide a statement that your operator is qualified to operate your equipment safely. Also provide a copy of your liability insurance.)

Table 1. Generic Test Case Matrix

	Test Bed #1	Test Bed #2	Test Bed #3	
			Single pipe	Double pipe
Blockage material	Glass or epoxy	Bentonite with sand or clay	Bentonite with sand or clay	Bentonite with sand or clay
Blockage number(s)	2	5	2	1
Blockage length	3 to 10 feet	3 to 10 feet	3 to 10 feet	3 to 10 feet
Blockage location	2 inch pipeline at 1 and 5 foot elevation (see Figure D.1(d)) elevation (see Internet Drawing No. TB #1-001)	Section A-B, E-F, G-H, I-J, and J-K (see Figure D.2(c)) and J-K (see Internet Drawing No. TB#2-001 & TB#2-002)	At both ends of the berm (see Figure D.3(c)) (see Internet Drawing No. TB#3-001)	At the center of the berm (see Figure D.3(c)) (see Internet Drawing No. TB#3-001)
Water submerged condition	Indicate if the technology can be operated in aqueous condition.	Indicate if the technology can be operated in aqueous condition.	Indicate if the technology can be operated in aqueous condition.	Indicate if the technology can be operated in aqueous condition.
Pipe structure	N/A	N/A	Indicate if the technology will be tested on a single wall pipe.	Indicate if the technology will be tested on a double wall pipe.
Access type	clean out pipe, jumper without clean out pipe, gate valve, or 2 inch pipeline (see inch pipeline	Hanford connector nozzle (3 inch diameter) or 3 inch pipeline (see Figure pipeline	N/A	N/A
Access diameter	1 inch if the equipment goes through the gate valve and/or jumper. 2 inch without access pipe	3 inch	N/A	N/A

TEST BED DESCRIPTIONS

“Large Scale Equipment Tests for Pipeline Unplugging Technologies”

DE-RP26-00NT40708

1.0 TEST BED DESCRIPTIONS

The Test Beds are designed to reflect typical pipe diameters and blockage resistance that would be encountered at DOE sites. There are two documents[†] available regarding the description of the Test Beds and blockage materials. They can be viewed at:

<www.hcet.fiu.edu/r&d/tfa/unplugging/documents.asp>.

Photographs and engineering drawings of the Test Beds can be viewed at:

<www.hcet.fiu.edu/r&d/tfa/unplugging/>.

The Northeast corner of the FIU-HCET site (450 ft by 450 ft) is reserved for the Test Beds. The engineering drawing “Site Map of Large Scale Test Beds” on the internet site (URL identified immediately above) shows the area for construction and describes how the test beds are located relative to each other.

Figure 1(below) is a photograph taken during the construction phase of Test Bed #2. Pipelines are laid out on the railroad ties using Unistruts[®]. Since each pipe section is 20 ft long, the pipelines for all the three Test Beds are welded or put together with flanges on site.

[†] “*Description of Large-Scale Test Beds for Equipment Tests of Pipeline Unplugging*”, Yumiko, Hemispheric Center for Environmental Technology, FIU, Miami, FL. August 4, 1999

“*Blockage Specification for Large-Scale Test Beds for Equipment Tests of Pipeline Unplugging*”, Yumiko, Hemispheric Center for Environmental Technology, FIU, Miami, FL. August 13, 1999.

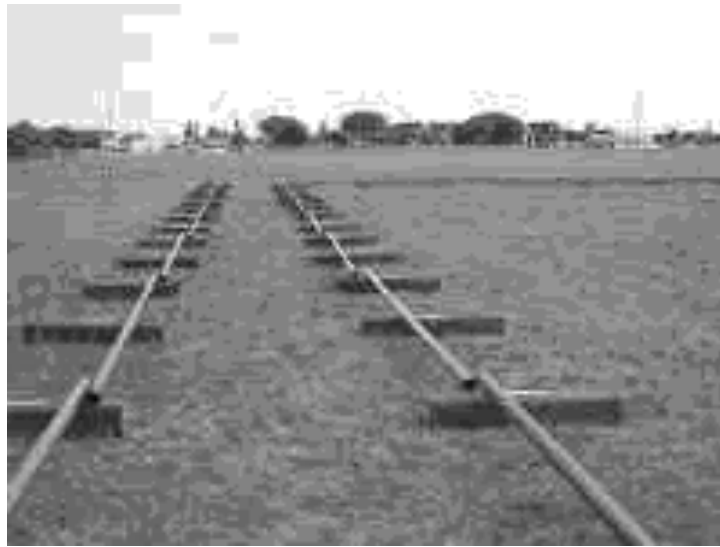


Figure 1. Site of Large-scale Demonstration Test Beds at FIU.

1.1 Test Bed #1: SRS Evaporator Gravity Drain Pipeline (2 inch pipes with 1 inch access, including lift line and jumper)

Test Bed #1 (select “Test Bed #1” on the internet site identified in Section 1.0) is constructed to reflect typical pipe diameters and blockage resistance encountered at the Savannah River Site (SRS) Evaporator Drain system, with hard deposits on the inside of the pipelines. Drawing Number TB #1-001 (from the internet site) is a schematic diagram of Test Bed #1. It shows the two parts of the Test Bed #1 on which the technology will be demonstrated:

- the gravity drain pipeline with one-inch access pipe and gate valve,
- the SRS Evaporator Jumper that will be placed on the ground level with a one-inch cleanout pipe as an entrance point.

All lines are two inches in diameter with blockage consisting of hard deposits on the inside surface.

The characteristics of the pipeline blockage in Test Bed #1 include:

- Glass, epoxy, or other simulant producing a hard, adherent coating on the inside surface of the pipe
- Length of blockage: 3 feet minimum, 10 feet maximum

1.2 Test Bed #2: Horizontal Long Pipeline

(3 inch pipe with 3 inch access; 1765 feet long)

Test Bed #2 (select “Test Bed #2” on the internet site identified in Section 1.0) is constructed to demonstrate the capabilities of reaching and unplugging technologies in a long pipeline. The primary function of a reaching system is to reach the locations of pipeline blockages. Test Bed #2 pipeline has a total length of 1,765 feet with both left and right turning elbows to challenge the technology (see Drawings TB#2-001 and TB#2-002 on the internet site). Access point is either a 3-inch pipe thread or Hanford connector nozzle that also has 3-inch diameter opening located at one end of the pipeline.

The characteristics of the pipeline blockage in Test Bed #2 include:

- Total solid concentration 50 - 80 wt% of solids of Bentonite with sand, china clay, or other simulant producing a bulk blockage
- Length of blockage: 3 feet minimum, 10 feet maximum

1.3 Test Bed #3: Buried Pipeline for Blockage Detection Through the Ground (3-inch diameter single and double wall pipes)

Test Bed #3 (select “Test Bed #3” on the internet site identified in Section 1.0) is constructed to demonstrate the capabilities of equipment that can determine the location of a pipeline blockage. The equipment positioned above ground would determine the location of a blockage in the core of a buried, jacketed pipe assembly as shown in Drawing Number TB#3-001 on the internet site.

The characteristics of the pipeline blockage in Test Bed #3 include:

- Total solid concentration 50 - 80 wt% of solids of Bentonite with sand, china clay, or other simulant producing a bulk blockage
- Length of blockage: 3 feet minimum, 10 feet maximum
- Radioactive sealed gamma source or other material may be available to test a specific through-the-ground detection system.

SECTION L - INSTRUCTIONS, CONDITIONS, AND NOTICES TO OFFERORS OR QUOTERS

L.22 PREPARATION INSTRUCTIONS: VOLUME II TECHNICAL PROPOSAL (JAN 2000)

Volume II - Technical Proposal will be used to assess both the scientific merit of the proposed work and its relevance to both DOE's current programmatic objectives and the objectives of this solicitation (see Part I, Section J, Attachment A) The technical proposal must be self-contained and written in a clear and concise manner. The proposal shall be definitive with respect to the research which the offeror actually proposes to conduct. If the proposal is selected for comprehensive evaluation, the criteria specified in Section M shall be applied.

The maximum number of pages for the Technical Proposal shall be limited to 25 pages. For interpretation of page guidelines, reference the clause entitled, "Proposal Preparation Instructions -- General". Note that the Cover Sheet, Resumes, Public Abstract, Table of Contents, Technology Demonstration Test Plan and other Pertinent Publications are not included in the page limitation.

To ensure that the technical proposal is evaluated strictly on its own merit, no cost information shall be included.

FORMAT AND CONTENT

The offeror shall include a technical discussion in the format specified below. This format relates to the technical evaluation criteria found in Section M. Alternate heading names and additional headings may be included as desired.

1. Cover Sheet.

A completed and signed cover sheet as per FAR 52.215-1 shall be used. The title of the proposed effort should be concise and descriptive of the work to be performed.

2. Public Abstract

A concise public abstract of no more than one (1) typewritten page clearly stating the objectives of the proposed research, the title of the project, methodology, and sponsoring organization(s) shall be included. The abstract is to provide an overview of the proposed project objectives. It is a stand-alone document. This abstract may be released to the public by DOE in whole or in part at anytime. It is therefore required that it shall not contain proprietary data or confidential business information.

3. Table of Contents

In order to produce a comprehensive application for this solicitation, the applicant should address, at a minimum, the areas listed below. To help facilitate the review process and to insure addressing all the review criteria, the applicant shall use the following Table of Contents when preparing the technical application.

TABLE OF CONTENTS

	<u>Page</u>
PUBLIC ABSTRACT	i
TABLE OF CONTENTS	ii
List of Tables	iii
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List of Acronyms	v

1. MERIT OF THE TECHNOLOGY	1
1.1 Technological Benefit	#
1.2 Applicability to DOE Complex	#
1.3 Prior Uses of Proposed Technology	#
2. TECHNICAL APPROACH	#
2.1 Technology Demonstration Test Plan Discussion	#
2.2 Approach to Mobilization, Operations and Demobilization	#
2.3 Project Schedule	#
2.4 Labor Hours, Travel and Justification	#
3. PERSONNEL QUALIFICATIONS, PROJECT ORGANIZATION, EXPERIENCE AND COMMITMENT	#
3.1 Key Personnel	#
3.2 Project Organization	#
3.3 Previous Experience	#
3.4 Commitment	#
APPENDICES	
A. RESUMES	#
B. ADDITIONAL PERTINENT PUBLICATIONS (if any)	#
C. TECHNOLOGY DEMONSTRATION TEST PLAN	#

(iv) Technical Discussion. This section shall contain the major portion of the Technical Proposal. It shall clearly address each of the Technical Proposal evaluation criteria in Part IV -- Section M, and at a minimum cover the factors listed below.

Section 1.0 Merit of the Technology

The Offeror shall provide evidence that the proposed technology is applicable to the DOE demonstration needs as defined in the Scope of Work and shall provide, at the minimum, the following:

- Description of the pipeline unplugging technology including basic principle, operational parameters and conditions, applicable pipe diameters and geometry, and dimensions and weight of the model.

- Description of portability options for removing the pipeline unplugging technology model from the transportation vehicle.

The Offeror shall discuss the degree of benefit offered by the proposed technology in terms of:

- No addition to DOE waste stream from using the proposed technology.

- Health and safety, training requirements, time savings, equipment mobilization and demobilization and maintenance requirements.

The Offeror shall discuss the degree to which the proposed technology may be applicable across the DOE Complex.

The Offeror shall discuss prior uses or application of the proposed pipeline unplugging technology as evidence that the technology is deployable.

Section 2.0 Technical Approach

This section shall describe the Offeror's technical approach to accomplish the work.

Offerors shall present a project scenario for the FIU-HCET site, clearly addressing at a minimum: roles and responsibilities of the major players with respect to mobilization, operations and demobilization of the pipeline unplugging technology.

The Offeror shall discuss the technical approach to mobilization, operations and demobilization of the pipeline unplugging technology. The Offeror shall provide a proposed test plan and schedule and include milestones and performance metrics in the work plan to gauge technical progress.

The proposed test plan shall be presented in as much detail as possible and include the following:

- Selection of Test Bed, needed utilities, special interface connections and any special requirements, modifications to the test beds, etc. to demonstrate the pipeline unplugging technology as per "Technology Demonstration Test Plan Preparation Guideline", Appendix A.

- Procedure to be used to demonstrate the pipeline unplugging technology on a Test Bed.

The Offeror shall provide a table listing the estimated labor hours and labor categories (for example, project manager, engineer, technician) required for each task. The Offeror shall discuss the rationale used to develop estimates for labor hours and labor categories. Cost information is not to be included in the technical proposal volume.

The Offeror shall describe the proposed travel. The Offeror shall include in the explanation the purpose of the trip, number of trips, the origin and destination, trip duration, and the number of personnel proposed to travel.

Section 3.0 Personnel Qualifications, Project Organization and Experience

The Offeror shall describe relevant technical and managerial experience, qualifications, and availability of the proposed project personnel.

The Offeror shall discuss any prior experience in managing projects that were similar in type, size, and complexity; and specifically discuss any prior experience in deploying the proposed or similar pipeline unplugging technology.

The Offeror shall discuss any outside commitments which might conflict with performance of this project. The Offeror shall indicate their degree of ownership and control of the technology.

APPENDICES

A. RESUMES A1

The Offeror shall include a resume for each individual expected to perform significant technical work on the project. At a minimum, the resume must include the individual's name, educational achievements (i.e. degree (s) obtained, date and education institution), and any additional information which validates their ability to perform the work as proposed.

B. ADDITIONAL PERTINENT PUBLICATIONS (if any) B1

The Offeror should include bibliographies of any publications which are related to the proposed pipeline unplugging technology.

C. TECHNOLOGY TEST PLAN C1

L.23 PREPARATION INSTRUCTIONS: VOLUME III - COST PROPOSAL

A. Format and Content.

Volume III - Cost Proposal shall consist of the offeror's estimated costs to perform the desired work as set forth in the SOW. Since the Cost Proposal shall be 1) evaluated to determine cost realism and the offeror's understanding of the magnitude of effort and 2) used as the basis for any necessary cost negotiation, the Cost Proposal shall be accurate, complete, and well documented. As prescribed by FAR 52.215-20 with Alternate 1, the offeror shall submit cost or pricing data and supporting attachments in accordance with the Cost Proposal Preparation Instructions/Format provided as follows:

B. General.

1. The Cost Proposal, Volume III, consists of the offeror's estimated costs to perform the desired work as set forth in the Statement of Work. Contractual cost information is not to be included in the Technical Proposal, Volume II, or the Offer and Other Documents, Volume I. The Contract Pricing Proposal Sheet is attached to this solicitation. (See Appendix C)
2. Once the prospective contractor has been selected, the estimated costs submitted with the proposal shall not be subject to increase, except for changes in Certified Cost or Pricing Data submitted with the proposal, unless changes are made in the requirements of the RFP.

Furthermore, increases shall be considered only in regard to those requirements that are actually affected by the changes (whether they are initiated by the Government, or the offeror), and then only to the extent that such increases will be considered separately, and not as part of a combined overall negotiation of the estimated cost and fee for the proposed contract.

C. Format and Contents.

The cost proposal shall include mandatory exhibits and additional information.

1. Preparation of Section One - Mandatory Exhibits:

- (a) **Exhibit A:** A Contract Pricing Proposal Sheet is a mandatory requirement. One fully executed proposal sheet shall be completed and included in the cost proposal. Offerors may use their own format for submitting the cost proposal. The proposal shall, at a minimum, include the exhibits below. Each offeror is cautioned that adequate pricing details must accompany the cost proposal.

Supporting cost detail shall be provided, as appropriate, on additional pages utilizing the following format:

COST PROPOSAL FORMAT

Cost Element	Task Number					Total
	1	2	3	4	5	
Direct Labor	\$xxxx	\$xxxx	\$xxxx	\$xxxx	\$xxxx	\$xxxx
Fringe/ Overhead	\$xxxx	\$xxxx	\$xxxx	\$xxxx	\$xxxx	\$xxxx
Travel	\$xxxx	\$xxxx	\$xxxx	\$xxxx	\$xxxx	\$xxxx
Materials/Supplies						
Consumables	\$xxxx	\$xxxx	\$xxxx	\$xxxx	\$xxxx	\$xxxx

Other	\$xxxx	\$xxxx	\$xxxx	\$xxxx	\$xxxx	\$xxxx
Subtotal	\$xxxx	\$xxxx	\$xxxx	\$xxxx	\$xxxx	\$xxxx
General & Administrative	\$xxxx	\$xxxx	\$xxxx	\$xxxx	\$xxxx	\$xxxx
Total Cost	\$xxxx	\$xxxx	\$xxxx	\$xxxx	\$xxxx	\$xxxx
Fixed Fee	\$xxxx	\$xxxx	\$xxxx	\$xxxx	\$xxxx	\$xxxx
Total Price	\$xxxx	\$xxxx	\$xxxx	\$xxxx	\$xxxx	\$xxxx

- (b) Exhibit B - Labor: The offeror's SOW is intended for defining the work scope. Direct Labor shall be supported by a matrix identifying labor categories, hours proposed, hourly rate and cost on a per-task and total project basis.
- (c) Exhibit C - Indirect Rates: This Exhibit will contain the major base and pool expense groupings (for indirects such as fringe, overhead, and G&A) by line item and dollar amount. This Exhibit shall be prepared for the offeror's most recently completed Fiscal Year, the current Fiscal Year, and the estimate for the next Fiscal Year. The offeror shall state at the bottom of the exhibit the inclusive dates of their Fiscal Year. The Offeror may substitute a Government approved written indirect rate agreement if such agreement contains rates that cover the period of performance.
- (d) Exhibit D - Travel/Materials/Other: This Exhibit shall contain itemized listings and justifications for any other direct costs such as travel, freight, materials, etc. **Travel** shall be supported by a matrix identifying number of trips, locations to be visited, number of persons traveling, transportation cost, per diem cost, and total cost. **Expendable Materials** must be supported by identifying the materials/clothing to be consumed, the unit cost and the number of units to be used, and total costs. **Other Direct Costs** such as printing/ reproduction/freight/postage cost may be identified as a flat amount on a per-task basis.

The contractor shall identify the basis of each of the costs (i.e., quotes, catalog prices, prior purchase orders, etc).

2. Preparation of Section Four, Additional Information.

- (a) Estimating Procedure. Include a discussion of the rationale used in estimating the various cost elements. For effective negotiations, it is essential that there be a clear understanding of:
- (1) The existing verifiable data;
 - (2) The judgmental factors applied in projecting from known data to the estimate;
 - (3) The contingencies used by the offeror in the proposed costs.

SECTION M - EVALUATION FACTORS FOR AWARD

M.1 GENERAL (MAR 1998)

Proposals will be evaluated in accordance with applicable DOE acquisition policies and procedures. Evaluation will be performed to determine the offeror's understanding of work to be performed, technical approach, potential for completing the work as specified in the solicitation, cost reasonableness, the probable cost to the Government, and ranking with competing offerors.

Award will be made to that responsible offeror(s), whose offer(s), conforming to this solicitation, is (are) considered most advantageous to the Government, considering the Evaluation Criteria in this Section M.

M.2 OVERALL RELATIVE IMPORTANCE OF EVALUATION CRITERIA (NOV 1997)

The technical proposal is of greater importance than the cost proposal. However, if, after evaluation of the technical and cost proposals, two or more competing overall proposals are within the competitive range, evaluated probable cost to the Government may be the deciding factor for selection, depending on whether the most acceptable overall proposal (excluding cost consideration) is determined to be worth the cost differential, if any. The offer and other documents proposal is to be evaluated for adequacy and compliance with the solicitation.

M.3 EVALUATION CRITERIA (MAY 1999)

A. Technical Criteria

Technical aspects of proposals will be evaluated in accordance with the following criteria, which are listed in descending order of importance. Within each criterion, subcriteria are either listed in descending order of importance, or are approximately equal in weight.

Criterion 1. Merit of the Technology (60%)

Extent of evidence presented which demonstrates that the proposed technology is applicable to the DOE demonstration needs as defined in the Scope of Work.

Degree of benefit offered by the proposed technology in terms of:

- Effect on the DOE waste stream from using the proposed technology.
- Health and safety, training requirements, time savings, equipment mobilization and demobilization, maintenance requirements, and secondary waste generation (if any) and disposition.

Degree to which the proposed technology is applicable across the DOE Complex.

Extent of prior use of the proposed technology for similar applications; stage of development; and availability.

Criterion 2. Technical Approach (20%)

Reasonableness of project scenario and defined roles and responsibilities.

Soundness of technical approach to mobilization, operations and demobilization of the technology. Clarity, completeness and feasibility of the proposed test plan.

Reasonableness of proposed labor hours, labor categories and travel.

Reasonableness of proposed technology demonstration schedule.

Criterion 3. Personnel Qualifications and Experience (20%)

Extent and appropriateness of the Offeror's technical and managerial experience, qualifications, and the availability of personnel proposed to perform the technology demonstration; extent and appropriateness of managing and/or deploying similar project; extent of commitment to project and degree of ownership.

B. Cost Criteria.

The cost proposal will not be point scored, assigned a numerical weight, or adjectivally rated. The cost proposal will be evaluated in accordance with the following criteria, which are of equal weight:

1. Reasonableness and appropriateness of cost.
2. Evaluated probable cost to the Government.

Selection of an offeror for award may involve a determination as to whether an otherwise technically superior proposal is worth any additional cost.